

# **MEETING ABSTRACT**

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# The influence of alpha-melanocortin enantiomers on acetaminophen-induced hepatis in mice

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# **Background**

L-alpha-Melanocortin is a strong inhibitor of inflammation. It is a promising new anti-inflammatory and hepatoprotective peptide. Consequently, its melanocortin receptors (MC<sub>1</sub>, MC<sub>3</sub>, MC<sub>4</sub> and MC<sub>5</sub>) could be possible targets for the development of new antiinflammatory drugs for chronic inflammatory liver disease. For a long time it has been believed that only the L-enantiomers of amino acids are present in higher animals, but recent investigations show that D-amino acids also exhibit physiological effects *in vivo*, despite their very small quantities. The aim of this study was to compare hepatoprotective effects of L-alpha-melanocortin and D-alpha-melanocortin using the acetaminophen model of chemical liver damage in male CBA mice.

### Methods

Tested substances were applied intraperitoneally 60 minutes prior to the intragastric application of acetaminophen (150 mg/kg). Animals were sacrificed 24 hours after the administration of acetaminophen. The criteria for monitoring hepatoprotective effects of the tested substances were biochemical parameters (AST and ALT) and histopathological analysis.

# **Results**

The results obtained by the histopathological analysis and biochemical findings show potent hepatoprotective and anti-inflammatory effects of L-alpha-melanocortin in the liver, and suggest the possibility of modulating liver inflammation by means of melanocortin molecules and

related receptors. D-alpha-melanocortin did not show any hepatoprotective effects *in vivo*.

### **Conclusions**

Our results show that peptide enantiomerism influences the protective effects of alpha-melanocortin peptides *in vivo*. This concept may be used to modulate peptide function *in vivo* and antibody binding assay *in vitro*.

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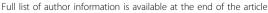
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